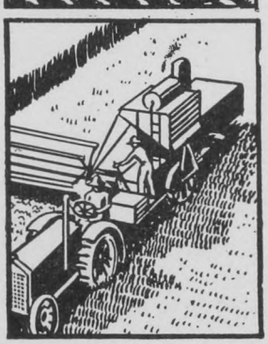


SEEDTIME AND HARVEST THROUGH THE AGES FROM HAND TO MECHANICAL POWER

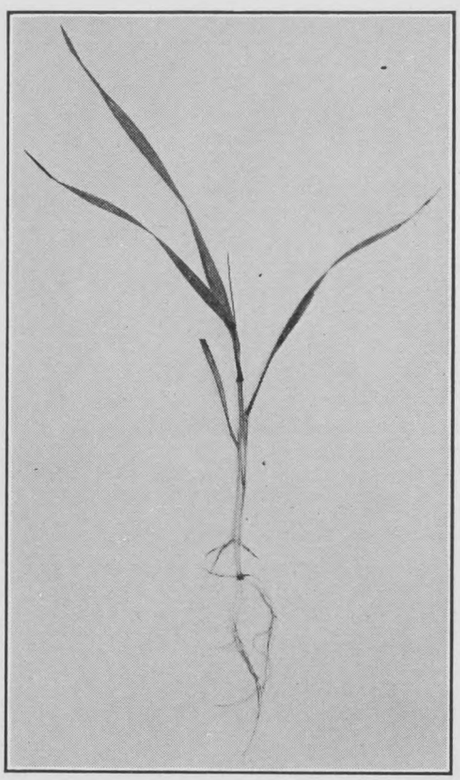
SEEDTIME & HARVEST

LINE ELEVATORS FARM SERVICE, WINNIPEG, MANITOBA

No. 148.

Contributed by
T. C. VANTERPOOL
PROFESSOR OF PLANT PATHOLOGY, UNIVERSITY OF SASKATCHEWAN,
SASKATOON, SASKATCHEWAN.

BROWNING ROOT ROT OF CEREALS



A wheat seedling affected by browning root rot. The crown roots and the uppermost primary roots are rotted, and the first leaf is dead.

From about the second week of June to the first week of July, large areas of many of the wheat crops on fallow in the Prairie Provinces will be seen to turn yellowish-brown in colour. This trouble is most frequently encountered on land which has been long under cereal cultivation. **It may reduce the yield of wheat on an average of 10 or more bushels per acre.** Oats and barley may be attacked if grown after fallow.

Cause. Many farmers are likely to attribute "browning" in wheat fields to various causes such as frost, wind injury or drought, but an examination of the diseased plants shows the trouble to be an inconspicuous root rot caused by a soil-inhabiting fungus known as *Pythium*.

Description. By injuring the root system browning root rot interferes with the absorption of nutrients and water from the soil. This results in spindly plants which have few tillers. The outer leaves become discolored, and turn quite brown. A close examination of the roots of "browning" plants shows that the tips of the crown roots are brown and rotted (see illustration).

Diseased plants take longer to mature, and are thus rendered more liable to damage from early frosts, leaf rust and other hazards. Reduced competition encourages a greater loss from more abundant weed growth. Occasionally, with the onset of good growing conditions, partial recovery may occur. None of the common wheat varieties is resistant to this root rot.

Control. The use of phosphate fertilizer by hundreds of farmers during the last 15 years has indicated conclusively that **the best, single, practical control measure is the application of ammonium phosphate (11-48).** This is best done at seeding time by using a fertilizer attachment to the seed drill. Twenty pounds per acre are recommended for the drier areas and 30 to 40 pounds where moisture conditions are more favourable.

By applying phosphate fertilizer a more vigorous root system develops, the plants stool out better, and yield may be increased by 10 or more bushels per acre. Once "browning" has appeared in a field it is likely to recur in subsequent fallow crops unless an attempt is made to combat it. Nothing can be done about control this year, but make arrangements to have a fertilizer attachment available for next year, and order your phosphate early.

For further information on browning root rot write to the Dominion Laboratory of Plant Pathology at Winnipeg, Saskatoon, or Edmonton, or to the Department of Biology, University of Saskatchewan, Saskatoon.

This is an expanded edition of the "Seedtime and Harvest" appearing in the weekly newspapers on June 13th,1946.